ORIGINAL RESEARCH PAPER

Gynaecology

Volume - 7 | Issue - 3 | March - 2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 79.96

"RARE CASE OF NON IMMUNE HYDROPS FOETALIS IN A HEPATITIS B POSITIVE MOTHER"

KEYWORDS: Non-immune hydrops fetalis, Mirror syndrome, Hepatitis B infection

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ABSTRACT **INTRODUCTION:** 85% of hydrops fetalis cases are non immune due to widespread immunoprophylaxis for red cell alloimmunization. NIHF incidence being 1:2500-3500. 4-15% cases contribute to infectious causes. Hepatitis B infection being the rarest of all. **CASE REPORT:** 30yr old G2 A1, conceived following 4th cycle of IUI(donor) was referred to us at 28weeks+4days of gestational age with NIHF and polyhydramnios. She was diagnosed, hepatitis B positive prior to conception. Repeat scan done:- polyhydramnios(25.8cms), UAD - AEDV, uterine artery PI – 1.26, gross cardiomegaly, absent stomach bubble and fetal ascites. Due to poor prognosis of the fetus and as she developed "Mirror syndrome" pregnancy was terminated. She delivered a dead edematous male fetus. Skin karyotyping and chromosomal study:-normal. Autopsy:- no significant finding. **CONCLUSION:** It can be assumed that Hepatitis B infection as cause of fetal hydrops may be underdiagnosed.

BACKGROUND

Hydrops fetalis refers to fluid accumulation in serous cavities and edema of soft tissues in the fetus. It is characterized as nonimmune in the absence of maternal circulating red-cell antibodies. 85% of hydrops fetalis cases are non immune due to widespread immunoprophylaxis for red cell alloimmunization1. NIHF incidence being [1]:2500-3500[2].4-15% cases contribute to infectious causes, with hepatitis B infection being the rarest of all.[1]

CASE REPORT:

A 30 year old lady G^2 A^1 (blighted ovum) who conceived with 4^{th} cycle of donor IUI and had a blighted ovum previously following the second cycle IUI(donor) was referred to us at 28 weeks and 4 days of gestational age with non immune hydrops fetalis and polyhydramnios detected during a routine growth scan. She was diagnosed as hepatitis B positive prior to conception and confirmed to be having chronic infection after serology testing. Scan done in our hospital showed polyhydramnios (25.8cms) and features of fetal hydrops. Absent umbilical artery flow, uterine artery doppler PI – 1.26 with diastolic notch, middle cerebral artery PSV was normal, gross cardiomegaly, pericardial effusion, absent stomach bubble , generalized skin edema, scalp edema and fetal ascites. Fetal echocardiography showed normal connected heart with no abnormal blood flow patterns. On further evaluation maternal blood investigations (a full blood count, renal, liver and thyroid function tests) were normal except for hypoalbuminemia. Both parents were Rh positive. As the mother developed pedal edema and pleural effusion ("Mirror" syndrome- maternal edema secondary to fetal hydrops) and due to poor fetal prognosis , the pregnancy was terminated. She delivered a dead edematous male fetus of 2.3kg . Fetal skin karyotyping and chromosomal analysis done and was found to be normal. Fetal autopsy showed no significant finding.

Investigations:

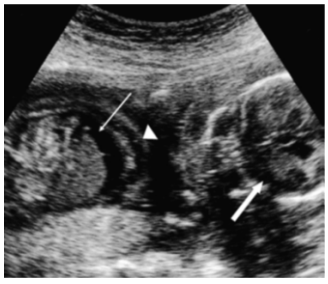


FIG.2:- USG SHOWING FETAL ASCITES

ULTRASOUND

Interval growth scan at 28 weeks

-SLIUF at 28-29 weeks gestational age with fetal cardiomegaly, minimal pericardial effusion, fetal ascites, echogenic bowel loops, generalized fetal skin edema, scalp edema noted.

- AFI : 25.8 cms

- Doppler : Impaired fetal blood flow

Uterine artery : PI - 1.26 , Diastolic notch noted

Umbilical artery: Absent ejection diastolic flow

Middle cerebral artery : PI - 1.30 , PSV - 18.6 cm/sec

Ductus Venosus : A – wave: positive , PIV – 0.67

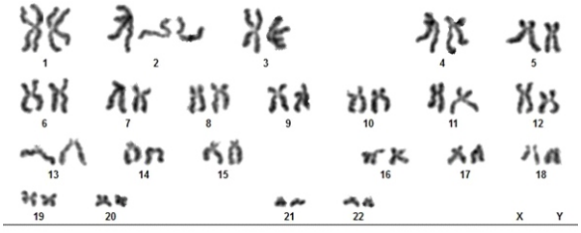
- EFW :- 1512 g

- Placenta : Posterior high, Grade 1

Blood group : "A" positive

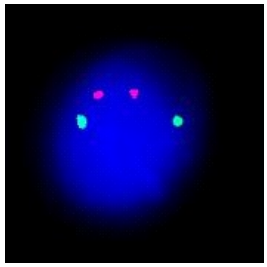
HbsAg – Positive HbeAg – Negative

FETAL KARYOTYPING – Normal karyotype – 46

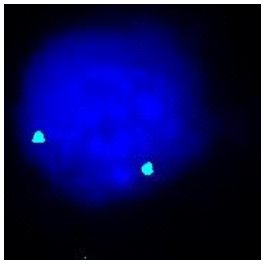


CHROMOSOMAL ANALYSIS BY FISH TECHNIQUE

Normal for chromosome 13, 18, 21 and sex chromosome



Chromosome 13 and 21



Chromosome 18

FETAL AUTOPSY -: No significant finding

IMPRESSION:

MATERNAL HEPATITIS B INFECTION AS A CAUSE OF NON IMMUNE HYDROPS FETALIS

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DISCUSSION:

Fetal hydrops is caused by multiple pathologies and carries a bad prognosis, depending upon the underlying etiology and gestational age at the time of occurrence. It has high mortality rate too. So a comprehensive and systematic search for causes has to be implemented, in particular for treatable or recurrent conditions once hydrops fetalis is diagnosed.

Infections contribute to 4-15% of the conditions.[1] Hepatitis B is a serious public health problem throughout the world. The reservoir of HBV chronic carriers in the world is estimated at more than 200 million people and 80% of them reside in Asia and the western Pacific. In high-incidence areas, such as south-east Asia, perinatal transmission of HBV from carrier mothers to newborns appears to be the most important factor for the high prevalence of HBV infection and 70-90% of infants born to HBsAg/HBeAg-positive mothers become chronic carriers.[5]

Hepatitis B infection can be attributed as a cause of fetal hydrops and may be underdiagnosed. This case report has highlighted the need for further studies, though rare, to establish a possible link between hepatitis B infection and hydrops fetalis.

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